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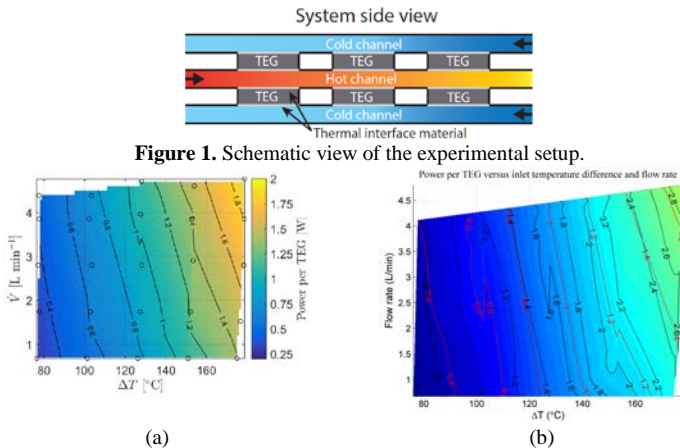
## Hybrid TEG-heat exchanger module for electrical power production

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The performance of a heat exchanger combined with thermoelectric (TEGs) generators is presented (see Fig. 1). The power production capability of the hybrid TEG-heat exchanger is evaluated as function of input temperatures and flow rates for three different contact interfaces. The maximum output power that the device is able to produce is 2 W per TEG (see Fig. 2a). The experimental results are compared with a numerical model assuming ideal thermal contact in order to evaluate the contributions of the fluid-pipe and pipe-TEG thermal contact resistance (see Fig. 2b). From the numerical model and the experimental data the thermal contact resistance for the three different interfaces were estimated and suggestions are provided how to improve the power performance of the hybrid TEG-heat exchanger.



**Figure 2.** Power per TEG versus temperature difference of the inlet hot and cold channels and flow rate (a) Experimental power (b) Comparison between experimentally measured (red lines) and numerically calculated power (black lines) for a model with ideal thermal contact assumption.